

Environmental evaluation and exposure limit according to FCC CFR 47part 15, §15.247(b)5

This test was performed to determine the minimum safe distance between the transmitter antenna and human to avoid public exposure in excess of limits for general population (uncontrolled exposure). Specification test limits are given in Table 1.1.1.

Table 1.1.1 RF exposure limits

Frequency range, MHz	Power density	
	mW/cm ²	W/m ²
902.0 – 928.0	0.60 – 0.62*	6.0 – 6.2
2400.0 – 2483.5	1.00	10.0
5725.0 – 5850.0	1.00	10.0

*- Power density limit within 300 - 1500 MHz was calculated according to the following equation: $S = F / 1500$, where S is power density in mW/cm² and F is frequency in MHz.

The power density at the specified distance was calculated from the following equation as provided in Table 1.1.2:

$$S = P \times G / (4 \times \pi \times r^2),$$

where S is power density in W/m², P is the transmitter output power in W, G is the transmitter antenna numeric gain and r is distance to transmit antenna in m.

Table 1.1.2 Power density calculation

ASSIGNED FREQUENCY: 902.0 – 928.0 MHz
 SPECIFIED DISTANCE: 0.20 m*
 MODULATION TYPE PSK

Carrier frequency, MHz	Peak output power, dBm	Antenna gain, dBi	EIRP		Power density, W/m ²	Limit, W/m ²	Margin, W/m ²	Verdict
			dBm	W				
905.78	18.79	3.0	21.79	0.151	0.30	6	-5.70	Pass
916.73	18.35	3.0	21.35	0.136	0.27	6.1	-5.83	Pass
923.85	20.12	3.0	23.12	0.205	0.41	6.2	-5.79	Pass

ASSIGNED FREQUENCY: 902.0 – 928.0 MHz
 SPECIFIED DISTANCE: 0.20 m*
 MODULATION TYPE FSK

Carrier frequency, MHz	Peak output power, dBm	Antenna gain, dBi	EIRP		Power density, W/m ²	Limit, W/m ²	Margin, W/m ²	Verdict
			dBm	W				
905.75	18.74	3.0	21.74	0.149	0.30	6	-5.70	Pass
916.30	17.75	3.0	20.75	0.119	0.24	6.1	-5.86	Pass
923.84	19.28	3.0	22.28	0.169	0.34	6.2	-5.86	Pass

* - The equipment deemed mobile as intended for use at a distance of more than 20 cm from humans.